Unit testing:

Cutting point-After button task reads from the fifo:

1. Test that a fifo read from an empty fifo returns false.
2. Test that a fifo read from a fifo returns the correct value.
3. Test that the rail gun charge gets calculated correctly.

Cutting point-After physics task updates values periodically.

1. If capsense force is not equal to 0, check if the horizontal position of the platform is correct
2. For satchels, check that the proper number of satchels are in air.
3. Check that the vertical position the of the satchels was updated correctly.
4. If something collides with a wall, check that its velocity changed sign.
5. If the shield was activated during the physics update, check if any satchels in range were properly destroyed.

Cutting point-after the display/LED task updates periodically

1. Check that the left LED turns on and off at the correct duty cycle.
2. After the castle evacuation time expires, check the left LED is constantly on.
3. Check that the Pulse width for the right LED is relatively equal to the current force magnitude.

Project Summary:

This week I designed my project diagram, determined what the scope of my work should be, and started to find good cutting points for unit testing.

Summary Effort/Estimate:

I have 6% of my current work (3 estimated hours out of 45 total) in 5% of the budgeted time (2.25 hours spent out of 45 hour estimate) For the work that has been completed, I took 0.75x (2.25 actual hours/3 estimated hours) as much time as I estimated.

In Scope work items:

Task Diagram-complete-3 hours

Unit Testing-not complete-8 hours

Test drafting- 3 hours

Test implementation/completion – 5 hours

Physics Task-not complete-15 hours total

Platform physics-not complete-5 hours

Satchel physics-not complete-5 hours

Railgun physics-not complete-5 hours

Display Task- not complete-12 hours

Button Task - not complete- 5 hours

Capsense Task- not complete- 2 hours

Total Time-45 hours

* Task Diagram
  + Overall, I think that my task diagram was implemented well. Most of the basic structure is based on the work I did in Lab 7, with some additional event flags and mutexes for the different functions needed for the game. I was also able to complete the diagram in slightly less time than what I had budgeted for, which is nice.

Work time for week 2

Unit testing- 1 hour